

Effect of Motivational Interviewing on Using Intrauterine Device in Women at High Risk for Pregnancy

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Abstract

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BACKGROUND: Reproductive health programs help women live healthier. Family planning consultation is an important component of reproductive health. A good family planning consultation can increase the use of effective birth control methods and improve the life quality of people, specifically of those at high risk. One of the most effective birth control techniques is an intrauterine device (IUD).

AIM: This study was done to investigate the effect of motivational interviewing (MI) on the use of IUD in women at high risk for pregnancy.

METHODS: This random educational trial was conducted in Isfahan on 44 women at high risk for pregnancy in 2015. Subjects were selected through random sampling. First, written informed consent of all samples was gathered, and then the intervention was made in five 45-minute motivational interviewing sessions by the researcher. For this study, a questionnaire was created to measure knowledge, attitude, acceptance, and performance. All the subjects filled this instrument prior and one month after the intervention. Data were then analysed using SPSS 20. The employed statistical tests included dependent t-test, independent t-test, Mann-Whitney, Fischer's exact test, and McNemar's test.

RESULTS: Results suggested that MI significantly improved the use of IUD in the intervention group ($p < 0.001$). Also, the mean knowledge ($p < 0.001$) and attitude ($p < 0.001$) scores significantly increased in the intervention group.

CONCLUSION: Due to the role of MI in increasing the use of IUD, embedding this type of consultation in specific programs for changing health behaviours during pregnancy can be beneficial.

Introduction

Reproductive health programs help women have a healthier life. The objective of reproductive health is the promotion of healthy behaviours to maintain health among people and society and decrease familial and marital problems. Reproductive health requires careful use of effective methods in favour of family health [1].

Non-use of contraceptives increases the rate of unwanted pregnancies and abortion, as one out of every twenty pregnancies is unwanted in the U.S. which varies depending on women's age range, race, and socioeconomic status [2]. Family planning programs help couples control the number and

interval of pregnancies in a free and responsible fashion [3] and prevent many high-risk and unwanted pregnancies. From a public health perspective, the most common contraceptive used globally is an intrauterine device (IUD) whose application ranges from 2% in Sub-Saharan Africa and 80% in Asia. Clinical factors such as insertion and removal costs, previous history of application, side effects, accessibility, and healthcare provider's recommendation and individual factors such as the acceptance of this method regarding cultural, economic, social, and religious considerations affect its application [4]. Inaccurate perceptions such as fear of pain, of IUDs being larger than the genitalia, and of sexual dysfunction have caused Iranian women not to be willing to use this method. Therefore, family

planning counselling can contribute greatly to altering such perceptions [5]. Family planning counselling is a two-way relationship between the client and the consultant in which the consultant encourages the client to use a safe contraception method [6]. Despite the existence of numerous family planning counselling clinics and easy access to them, the rate of unwanted pregnancies and abortions is still high [7] [8]. Of an estimated 210 million global pregnancies, 38% are unplanned, out of which 22% end in abortion. According to the statistics, every 3 minutes a woman dies of abortion complications, accounting for 13% of all maternal deaths worldwide (99% out of which occur in developing countries); whereas, 25% of maternal deaths can be controlled by preventing unwanted pregnancy and its complications [3] [9]. According to the latest statistics, the incidence of unplanned pregnancies in Iran is about 24% to 40% with 221 abortions per day. This high rate of unwanted pregnancies is a warning to the society, asking for special attention to those at high risk. Many of women at high risk with an unplanned pregnancy do abortion, mainly through unsafe methods, which are associated with the risk of mortality and maternal complications [4] [10]. Four main causes of maternal death in Iran are pregnancy under 18 years of age, pregnancy intervals of less than three years, frequent pregnancies, and pregnancy after 35-40 years of age [5] [11]. These are considered as four high-risk pregnancy factors. Making correct decisions in areas such as family size, pregnancy intervals, and other reproductive health matters in the family requires adequate knowledge and right insight, which can only be gained through proper consultation

The revision of consultation methods seems to be one of the solutions in preventing high-risk pregnancies.

Motivational interviewing (MI) is counselling approach introduced by Miller and Rollnick and was first used for alcohol abuse control. Since the first clinical description of MI by Miller in 1983, it was increasingly researched and used in treating various problems such as substance abuse, gambling problem, eating disorder, and anxiety disorders, curing and controlling chronic diseases, and improving health behaviours [9] [12]. MI is used as a client-centered, directive method for enhancing patient's intrinsic motivation to change by exploring and resolving ambivalence. This method is inspired by the client-centered technique, developed by Carl Rogers, and its most important component, i.e. empathy with the patient. MI relies on counselling techniques and attempts to change client's attitude towards the pros and cons of continuing unhealthy behaviours. This non-aggressive approach is specifically effective for people who are not ready for change or uncertain of it [10] [13].

Since opting for a specific contraception method by women depend on their perception of its mental and physical effects [6] [11] [12] [14] [15] [16].

Counselling can be very useful in raising the awareness of clients in this regard.

Therefore, this study was done to investigate the > effect of motivational interviewing (MI) on the use of IUD in women at high risk for pregnancy

Methods

This random educational trial was conducted in Isfahan on 44 women at high risk for pregnancy in 2015. After written consent were randomly divided into two equally sized groups (intervention and control) by assigning a number to the medical record of each woman and then using random number table. The intervention group received five 45-minute MI sessions once a week. The control group received the routine training provided in clinics. Eligible patients included: (1) women at gestational age (15-49 years); (2) women with basic literacy level; (3) women with no contraindication to IUD placement (due to pregnancy, puerperal sepsis, PID or sexually transmitted disease at present or in the last three months, endometrial and cervical cancer, undiagnosed genital bleeding, fibroid tumors that change the shape of uterus, allergy to copper, and hepatolenticular degeneration); (4) women at high risk for pregnancy (due to tobacco use, pregnancy interval of than three years, substance abuse, malnutrition, aged over 35 years, having more than four pregnancies, chronic disease with health risk for pregnancy); (5) women who tend to use a reliable contraceptive method but have ambivalence towards using IUD misconceptions. Exclusion criteria were: (1) movement of mother to another city during counselling; (3) and interrupted attendance at educational sessions (e.g. more than two times absence). Data collection instruments included a researcher-made questionnaire that measured the knowledge, attitude, acceptance, and performance factors. Its first part contained demographic information. The second part was comprised of 12 questions on knowledge(true or false), 36 items addressing attitude (three-point Likert scale; "agree," "neutral," "disagree"), single question that measured acceptance ("Yes" and 'No'), and one item dealt with performance (Yes" and 'No"). The content validity method was used to assess the validity of the questionnaire. To do this, the questionnaire was reviewed by a panel comprised of 10 senior lecturers (one with PhD in reproductive health, two gynaecologists, three with masters in midwifery currently working in the clinic, and two psychologists), and their opinions were applied to the questionnaire. Finally, after the removal of problems, ambiguities, and problematic questions, the validity of the questionnaire was confirmed. To measure the reliability of it, Cronbach's alpha with a minimum value of 0.7 was employed.

Before research initiation, the necessary authorisations were obtained, and then the researcher introduced himself to research units and explained the research objective and methodology. After collecting the written informed consent of all participants, the pre-test was completed by the subjects. Samples were then randomly divided into the intervention and control groups. The control group received routine training provided in clinics; whereas, the intervention group received five 45-minute MI sessions held individually. The main independent research variable was MI. The configuration of the MI sessions was extracted from "Motivational Interviewing in the Treatment of Psychological Problems," as well as some articles [17] [18] [19] [20] [21].

Table 1: Configuration and content of MI sessions

First	Introduction: Objectives, effective dimensions of the problem, stages of change
Second	Feelings: feelings identification practice, positive and negative dimensions of maintaining and changing behaviour, internal or external incentives for change
Third	Values: definition of values, clarification (conflict between values and current values), identification, confirmation and recognition of clients' values
Fourth	Deciding internal or external incentives, framework redevelopment, the definition of failures, clients' sense of self-failure
Fifth	Calling for clients' capabilities, perspective practice

All sessions were held by the researcher. Homework was given to the clients at the end of each session, and that of preceding session was reviewed for problem-solving. The weekly sessions were held for five weeks. One month after the completion of MI session, the questionnaire was filled again by the intervention and control groups to measure the effectiveness of MI.

The collected data were analysed with descriptive and inferential tests, dependent t-test (intergroup comparison) independent t-test (intra-group comparison), Mann-Whitney test, Fisher's exact test, and McNemar's test (to determine the effect of clients' acceptance on their performance), using SPSS 20.

Results

The mean age of the participants and their partners in the intervention and control groups was 33.18 ± 8.03 and 32.57 ± 7.89 , and 38.32 ± 9.29 and 37.82 ± 11.33 , respectively.

According to the statistics, three (13.6%) and one (4.5%) subjects in the intervention and control groups were employed, respectively. The remaining women were housewives. Other demographic features of the participants have been presented in Table 2.

Educational status of the intervention group versus control group was as follows: 4.5% vs 22.7%

(one vs five subjects) were illiterate, 27.3% vs 22.7% (six vs five subjects) attained a primary school education, 18.2% vs 27.3% (four versus six subjects) attained a secondary school education, and 13.6% vs 4.5% (three vs one) attained an academic education.

Table 2: Demographic variable in Intervention and control groups

Variable	Intervention Group	Control Group	p-Value
	Mean \pm SD	Mean \pm SD	
Pregnancy Number	2.6 \pm 0.4	3.2 \pm 0.5	0.41
Para	2.1 \pm 0.24	2.68 \pm 0.45	0.29
Abortion	0.5 \pm 0.18	0.5 \pm 0.22	1.00
Live Child	2.14 \pm 0.24	2.5 \pm 0.41	0.402
Education Status (%)	1 (4.5)	5 (22.7)	
Basic Literate			
Primary school	6 (27.3)	5 (22.7)	0.31
Guidance school	8 (36.4)	5 (22.7)	
High school	4 (18.2)	6 (27.3)	
Diploma	3 (13.6)	1 (4.5)	

The mean knowledge scores were not significantly different between the intervention and control groups before the intervention (56.81 ± 18.11 vs 54.93 ± 18.03). Other post-intervention variables are presented in Table 3. The mean post-intervention knowledge scores were 97.34 ± 3.97 and 56.72 ± 17.66 in the intervention and control groups, respectively, which was significantly higher in the former ($p < 0.001$).

The mean attitude scores were not significantly different between the intervention and control groups before the intervention (70.1 ± 18.3 vs 72.8 ± 15.9). Other post-intervention variables are presented in Table 3. The mean post-intervention attitude scores were 97.84 ± 2.8 and 73.6 ± 13.9 in the intervention and control groups, respectively, which was significantly higher in the former ($p < 0.001$). Findings from reviewing data showed that the frequency of acceptance was not significant between the two group before the intervention ($p = 0.349$), insofar as 22.7% (5 subjects) in the intervention group and 13.6% (3 subjects) in control group were positive to the use of IUD.

Findings from reviewing data suggested the significantly higher performance of intervention group in IUD placement ($p < 0.001$), insofar as 15 subjects (68.2%) in the intervention group and only one subject in the control group placed IUD. Data from McNemar's test showed that women in the intervention group had significantly higher performance than acceptance ($p = 0.006$); whereas, these factors were not significantly different in the control group ($p = 0.62$).

Table 3: The mean knowledge and attitude and performance in Intervention and control groups

Variables	Time	Control	Intervention	p-value
		Mean \pm SD	Mean \pm SD	
Knowledge	Before	54.9 \pm 18.03	56.8 \pm 18.1	0.73
	After	56.7 \pm 17.7	97.3 \pm 4.0	0.001
		>0.15	>0.1	p-value
Attitude	Before	72.8 \pm 15.9	70.1 \pm 18.3	0.61
	After	73.6 \pm 13.9	97.8 \pm 2.8	0.001
		>0.24	<0.001	p-value
Acceptance (%)	After	3 (13.6)	5 (22.7)	0.349
Performance (%)	After	1 (4.5)	15 (68.2)	0.001

Discussion

In this research, the effect of motivational interviewing on the use of IUDs in women with high-risk pregnancy was studied. The findings showed that IUD insertion in the motivational interviewing group was twice as that in the control group. According to the results, this performance was influenced by a significant increase in the level of awareness and attitude in the intervention group than the control group. Studies have shown that women's knowledge about intrauterine devices is low and combined with false perceptions such as fear of cancer, infection, and infertility. Therefore, education can be very helpful in this regard [22]. In a study conducted by Whitaker *et al.* titled "Knowledge and attitudes of women of childbearing age and girls around puberty about intrauterine devices", 144 English-American women aged 14-24 received brief training for 3 minutes on how to insert and remove IUDs. The results showed an increase in the willingness of women to use IUDs by 53%. Women of childbearing age stated that the positive features of IUDs that encourage them to select them are their long-lasting effects (10 years) and their hiddenness from others. Although this three-minute training had a positive impact on the willingness of women to use IUDs, it is unclear whether this willingness will come into practice in the future. In the present study which was conducted using the motivational interviewing method, the rate of IUD insertion and removal was more than 50% one month after the intervention. The rate of adoption after the intervention also showed a significant increase in the motivational interviewing group.

Hence, raising the awareness and attitude of women was effective in adopting this method. In this study, it has been recommended that training programs be developed for women in need of long-acting reversible methods and healthcare workers to eliminate misinformation and misplaced prejudices [23]. Ferreira *et al.* studied the selection of the post-abortion contraceptive method in a family planning clinic in the northeast of Brazil and concluded that increased awareness in the post-abortion stage leads to the further adoption of various contraception methods. Accordingly, they recommended that providing individual family planning counselling and training in post-abortion, especially for people with poor economic status, can increase the adoption of contraception methods and reduce high-risk pregnancies and unsafe abortions [24].

Adoption of right decisions in families about the number of children, interval between pregnancies, and other issue related to reproductive health requires sufficient knowledge and correct insight which cannot be achieved without counselling [25]. By strengthening intrinsic motives, motivational interviewing corrects misconceptions and eliminates uncertainties of individuals and directs them towards

choosing a safe method of family planning. IUS is a long-acting reversible method that prevents unwanted pregnancies. The rate of using IUD in the US increased from 1.2% in 2002 to 5.5% in 2008. The intrauterine device is a highly secure, high-performance, long-acting methods with a refractive index of 2% in 5 years. Unlike oral contraceptives that require daily and continuous consumption for maximum efficiency, IUD takes the minimum effort of the user after insertion [26].

Given that women in the study were of low economic stratum and pregnancy would jeopardise their physical and mental health, the use of a less costly method was taken into account by authors. A qualitative study titled "Wrong ideas about intrauterine device among people of Isfahan" was conducted by Manzoori *et al.*, in May 2009. Women of childbearing age who had never used IUD with any contraindications for IUD insertion were interviewed in a semi-structured manner. Their findings showed that fear of side effects of IUD, religious beliefs, fear of IUD insertion process, fear of problems with sexual intercourse, and fear of damage to the fetus was the main erroneous beliefs about IUDs. Among these reasons, religious beliefs were mentioned as the most important obstacle to the use of IUDs. They recommended that providing special counselling to people who intend to use IUDs in the future can reduce false perceptions in society and increase the use of IUDs by those who need to this contraception method [6]. According to studies, the low use of IUDs can be attributed to insufficient knowledge by people and healthcare workers and false information provided by the media, including the Internet [23] [27] [28]. Peterson *et al.* conducted a study on 764 women aged 16-44 at risk of unwanted pregnancy and sexually transmitted diseases using the motivational interviewing method. Participants in the control group only received public health education in one session. The use of family planning methods (with high efficiency) was studied 2, 8, and 12 months later. At the beginning of the study, 59% and 19% of participants stated that they used the effective methods of contraception at a high and low level, respectively, and 22% of them reported no use of these methods. Two months later, the rate of contraceptive use in the intervention and control groups was reported at 72% and 66%, respectively. After 12 months, no significant difference was observed between the two groups. About 10-11% of participants in both groups had an unwanted pregnancy, and about 10% of them were infected with sexually transmitted diseases. Authors recommend the repetition of counselling sessions for decision-making about the use of contraceptives to prevent unwanted pregnancy and sexually transmitted diseases. In the present study, duration of using IUD and its rate of removal due to complication were not followed up because of time limitation [29].

According to the research findings implementation of MI increased the use of IUD. What it seems is a suitable counselling method for contraceptive counselling. Therefore, this type of counselling can be embedded in reproductive health behaviour change programs.

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Motivating behaviour change to protective risk behaviour is one of the most important duties of nurse/midwife staff, and motivational interviewing is an appropriate way to deal with uncertainties of women about the use of contraceptives.

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